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Nota di contenuto	HANDBOOK OF INDUSTRIAL MIXING; CONTENTS; Contributors; Introduction; Mixing in Perspective; Scope of Mixing Operations; Residence Time Distributions: Chapter 1; Mixing Fundamentals: Chapters 1-5; Mixing Equipment: Chapters 6, 7, 8, and 21; Miscible Liquid Blending: Chapters 3, 7, 9, and 16; Solid-Liquid Suspension: Chapters 10, 17, and 18; Gas-Liquid Contacting: Chapter 11; Liquid-Liquid Mixing: Chapter 12; Mixing and Chemical Reactions/Reactor Design: Chapters 13 and 17; Heat Transfer and Mixing: Chapter 14; Specialized Topics for Various Industries: Chapters 15-20 Conversations Overheard in a Chemical PlantThe Problem; Competitive-

Consecutive Reaction; Gas-Liquid Reaction; Solid-Liquid Reaction; Liquid-Liquid Reaction; Crystallization; Using the Handbook; Diagnostic Charts; Mixing Nomenclature and Unit Conversions; Acknowledgments; References; 1 Residence Time Distributions; 1-1 Introduction; 1-2 Measurements and Distribution Functions; 1-3 Residence Time Models of Flow Systems; 1-3.1 Ideal Flow Systems; 1-3.2 Hydrodynamic Models; 1-3.3 Recycle Models; 1-4 Uses of Residence Time Distributions; 1-4.1 Diagnosis of Pathological Behavior
1-4.2 Damping of Feed Fluctuations1-4.3 Yield Prediction; 1-4.4 Use with Computational Fluid Dynamic Calculations; 1-5 Extensions of Residence Time Theory; Nomenclature; References; 2 Turbulence in Mixing Applications; 2-1 Introduction; 2-2 Background; 2-2.1 Definitions; 2-2.2 Length and Time Scales in the Context of Turbulent Mixing; 2-2.3 Relative Rates of Mixing and Reaction: The Damkoehler Number; 2-3 Classical Measures of Turbulence; 2-3.1 Phenomenological Description of Turbulence; 2-3.2 Turbulence Spectrum: Quantifying Length Scales
2-3.3 Scaling Arguments and the Energy Budget: Relating Turbulence Characteristics to Operating Variables2-4 Dynamics and Averages: Reducing the Dimensionality of the Problem; 2-4.1 Time Averaging of the Flow Field: The Eulerian Approach; 2-4.2 Useful Approximations; 2-4.3 Tracking of Fluid Particles: The Lagrangian Approach; 2-4.4 Experimental Measurements; 2-5 Modeling the Turbulent Transport; 2-5.1 Time-Resolved Simulations: The Full Solution; 2-5.2 Reynolds Averaged Navier-Stokes Equations: An Engineering Approximation
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3-4 Physics of Chaotic Flows Applied to Laminar Mixing

Sommario/riassunto

Handbook of Industrial Mixing will explain the difference and uses of a variety of mixers including gear mixers, top entry mixers, side entry mixers, bottom entry mixers, on-line mixers, and submerged mixers The Handbook discusses the trade-offs among various mixers, concentrating on which might be considered for a particular process. Handbook of Industrial Mixing explains industrial mixers in a clear concise manner, and also:* Contains a CD-ROM with video clips showing different type of mixers in action and a overview of their uses. * Gives practical insights by the top professional in